Montana Department of Natural Resources and Conservation
Water Resources Division
Water Rights Bureau

ENVIRONMENTAL ASSESSMENT
For Routine Actions with Limited Environmental Impact

Revised 1-2001

Note: Instructions to DNRC staff for preparing this EA can be found at: http://www.dnrc.state.mt.us/eis_ea.html

Part I. Proposed Action Description

1. *Applicant/Contact name and address*: Montana, State of University System (NRTHN)
Physical Plant
PO Box 7751
Havre, MT 59501

2. *Type of action*: Application for Beneficial Water Use Permit No. 40J 30023486

3. *Water source name*: Groundwater Well

4. *Location affected by action*: SWSESW Sec. 8, T32N R16E, Hill County

5. *Narrative summary of the proposed project, purpose, action to be taken, and benefits*: The applicant proposes to pump water at a rate of 435 gpm up to 146.9 acre-feet to be used for a geothermal cooling system for the Advanced Technology (ATC) Building and Brockman Hall, Montana State University Northern (MSU-N) buildings. Water will be pumped from a groundwater extraction well through a closed loop system and re-injected into a separate groundwater injection well located about 600 feet away. The estimated time from extraction to injection at the full flow rate is less than 120 seconds. This is a closed system, is not subject to evaporative losses, and is considered non-consumptive. The extraction and injection wells and the place of use is located in the SWSESW Section 8, T32N R16E, Hill County. The period of use is from January 1 to December 31. Normal cooling demand has been projected to require between 225 – 435 gpm. Peak groundwater pumping at 435 gpm is designed to occur when outside air temperatures are above 75 degrees. The system is further designed to operate at a reduced rate of about 225 gpm when outdoor air temperatures are between 55 degrees and 75 degrees.

   The DNRC shall issue a water use permit if an applicant proves the criteria in 85-2-311, MCA are met.

6. *Agencies consulted during preparation of the Environmental Assessment: (include agencies with overlapping jurisdiction)*
Montana State Historic Preservation Office (SHPO)
Montana Natural Heritage Program
Bureau of Mines and Geology Website

Part II. Environmental Review

1. Environmental Impact Checklist:

PHYSICAL ENVIRONMENT

WATER QUALITY AND DISTRIBUTION

Water quality *- Assess whether the stream is listed as water quality impaired or threatened by DEQ, and whether the proposed project will affect water quality.*

Determination: This project will utilize groundwater through a closed loop system. There are no perennial surface sources near this project location.

Groundwater *- Assess if the proposed project impacts ground water quality or supply. If this is a groundwater appropriation, assess if it could impact adjacent surface water flows.*

Determination: No impacts expected. This project is a closed loop system and is considered non-consumptive. The water from the extraction well will be re-injected into the same aquifer through an injection well located about 600 feet away. The estimated time from extraction to injection is less than 120 seconds at the full flow of 435 gpm. At a reduced flow of 225 gpm, it will take less than 4 minutes. The Montana Department of Environmental Quality (DEQ) was contacted by the applicant's engineer prior to a similar well system for MSU-Northern completed in 2003. DEQ indicated that a permit is not required from them as long as nothing is added to the water prior to re-injection. They further stated that water temperature is not a regulated parameter.

DIVERSION WORKS *- Assess whether the means of diversion, construction and operation of the appropriation works of the proposed project will impact any of the following: channel impacts, flow modifications, barriers, riparian areas, dams, well construction.*

Determination: No impacts expected. The groundwater well was drilled by a licensed well contractor. This is a non-consumptive project and the closed loop cooling exchange system was designed and will be completed by professionals knowledgeable in the construction of ground source pump systems. The proposed groundwater project will consist of one extraction well and the water will be re-injected into the same aquifer through an injection well located less than 600 feet away.

UNIQUE, ENDANGERED, FRAGILE OR LIMITED ENVIRONMENTAL RESOURCES

Endangered and threatened species *- Assess whether the proposed project will impact any threatened or endangered fish, wildlife, plants or aquatic species or any "species of special concern," or create a barrier to the migration or movement of fish or wildlife. For groundwater, assess whether the proposed project, including impacts on adjacent surface flows, would impact any threatened or endangered species or "species of special concern."*

Determination: No impacts expected. The production well is 164 feet deep and will have no impacts on surface flows. The injection well is 157 feet deep. According to the Montana Natural Heritage Program, since the wells have already been drilled, any cultural properties that may have been in the area have already been impacted. Since the wells are located on campus, it is likely any cultural properties were already impacted during construction of the university.

Wetlands *- Consult and assess whether the apparent wetland is a functional wetland (according to COE definitions), and whether the wetland resource would be impacted.*

Determination: No known wetlands exist in the project area.

Ponds *- For ponds, consult and assess whether existing wildlife, waterfowl, or fisheries resources would be impacted.*

Determination: Not applicable.

GEOLOGY/SOIL QUALITY, STABILITY AND MOISTURE - *Assess whether there will be degradation of soil quality, alteration of soil stability, or moisture content. Assess whether the soils are heavy in salts that could cause saline seep.*

Determination: The wells were drilled in June, 2004, and disturbance to the soils has already occurred. This is a closed system and all water extracted is injected back into the aquifer. No degradation of soil quality, alteration of soil stability or moisture content should occur.

VEGETATION COVER, QUANTITY AND QUALITY/NOXIOUS WEEDS – *Assess impacts to existing vegetative cover. Assess whether the proposed project would result in the establishment or spread of noxious weeds.*

Determination: No impacts.

AIR QUALITY – *Assess whether there will be a deterioration of air quality or adverse effects on vegetation due to increased air pollutants.*

Determination: No impacts.

HISTORICAL AND ARCHEOLOGICAL SITES – *Assess whether there will be degradation of unique archeological or historical sites in the vicinity of the proposed project.*

Determination: According to the Montana State Historic Preservation Office (SHPO), there are 3 species of special concern found in the general area of this project. The species are the Lark Bunting, the Chestnut-collared Longspur and the Sauger. The sauger fish and one of the two birds, the Chestnut-collared Longspur, is considered a sensitive species by the BLM. The Lark Bunting did not indicate a Federal Agency status. Since the project is piped internally both to the buildings and to the injection well, it is unlikely this project will degrade or impact archeological or historical sites.

DEMANDS ON ENVIRONMENTAL RESOURCES OF LAND, WATER, AND ENERGY – *Assess any other impacts on environmental resources of land, water and energy not already addressed.*

Determination: No additional impacts on other environmental resources were identified.

HUMAN ENVIRONMENT

LOCALLY ADOPTED ENVIRONMENTAL PLANS AND GOALS – *Assess whether the proposed project is inconsistent with any locally adopted environmental plans and goals.*

Determination: There are no known environmental plans or goals in this area.

ACCESS TO AND QUALITY OF RECREATIONAL AND WILDERNESS ACTIVITIES – *Assess whether the proposed project will impact access to or the quality of recreational and wilderness activities.*

Determination: No impacts.

HUMAN HEALTH - *Assess whether the proposed project impacts on human health.*

Determination: No impacts.

PRIVATE PROPERTY - *Assess whether there are any government regulatory impacts on private property rights.*
Yes___ No_X_. If yes, analyze any alternatives considered that could reduce, minimize, or eliminate the regulation of private property rights.

Determination: There are no additional government regulatory impacts on private property rights associated with this application.

OTHER HUMAN ENVIRONMENTAL ISSUES - *For routine actions of limited environmental impact, the following may be addressed in a checklist fashion.*

Impacts on:

(a) *Cultural uniqueness and diversity ?* No significant impact.

(b) *Local and state tax base and tax revenues ?* No significant impact.

(c) *Existing land uses ?* No significant impact.

(d) *Quantity and distribution of employment ?* No significant impact.

(e) *Distribution and density of population and housing ?* No significant impact.

(f) *Demands for government services* *?* No significant impact.

(g) *Industrial and commercial activity* *?* No significant impact.

(h) *Utilities* *?* No significant impact.

(i) *Transportation* *?* No significant impact.

(j) *Safety* *?* No significant impact.

(k) *Other appropriate social and economic circumstances* *?* No significant impact.

2. ***Secondary and cumulative impacts on the physical environment and human population:*** No secondary or cumulative impacts have been identified.

3. ***Describe any mitigation/stipulation measures:*** None

4. ***Description and analysis of reasonable alternatives to the proposed action, including the no action alternative, if an alternative is reasonably available and prudent to consider:*** No reasonable alternatives were identified in the EA. The no action alternative would require the use of other energy sources to cool the building.

PART III. Conclusion

Based on the significance criteria evaluated in this EA, is an EIS required? No

If an EIS is not required, explain why the EA is the appropriate level of analysis for this proposed action: No significant impacts have been identified, therefore an EIS is not necessary.

Name of person(s) responsible for preparation of EA:

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Date: December 19, 2006